

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 1, 4, 5 and 8 are currently being amended.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1 and 3-9 remain pending in this application.

Claims 1 and 3-9 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,922,651 to Hoshizaki et al (hereinafter "Hoshizaki") in view of JP-62157641 to Okamoto et al. (hereinafter "Okamoto"), and further in view of U.S. Patent No. 6,993,823 to Kobayashi et al. (hereinafter "Kobayashi"). Applicant respectfully traverses this rejection for at least the following reasons.

Embodiments of the present invention are directed to superconductors and methods for producing superconductors. According to one embodiment, a method of producing a semiconductor comprises "forming a superconducting layer on a base layer by performing a film deposition at least three times without substantially changing an oxygen gas pressure between the at least three times." In order to increase the critical current,  $I_c$ , the introduction of oxygen during the film deposition is enhanced by providing an oxygen gas pressure that is below atmospheric pressure. For example, as described in the specification, "deposition was done ... in an oxygen gas atmosphere having a gas pressure of 26.6 Pa (200 mTorr) ...." (pg 10, 11. 4-7) Accordingly, independent claim 1 recites "wherein the oxygen gas pressure is below atmospheric pressure." Independent claim 4 recites a similar feature.

None of the cited references teach or suggest at least this feature of the invention as recited in independent claims 1 and 4. The Office Action cites Kobayashi as disclosing maintaining a constant pressure in the oxygen during deposition to form a stable oxide superconducting layer. However, the oxygen pressure disclosed by Kobayashi is not below atmospheric pressure. In fact, since Kobayashi addresses the problems associated with preventing voids from being formed between superconducting crystals, Kobayashi discloses using a pressurized atmosphere of up to 50 MPa. See Kobayashi, Abstract. Use of a reduced pressure atmosphere would be contrary to the purposes of the disclosure of Kobayashi.

Thus, Kobayashi fails to teach or suggest this feature of independent claims 1 and 4. Similarly, Hoshizaki and Okamoto also fail to teach or suggest this feature. Since none of the references teach or suggest at least this feature, the Office Action has not established a *prima facie* case of obviousness.

Therefore, independent claims 1 and 4 are patentable. Claims 3, 5 and 6 depend directly from allowable claim 1 and are, therefore, patentable for at least that reason, as well as for additional patentable features when those claims are considered as a whole. Similarly, claims 7-9 depend directly from allowable claim 4 and are, therefore, patentable for at least that reason, as well as for additional patentable features when those claims are considered as a whole.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

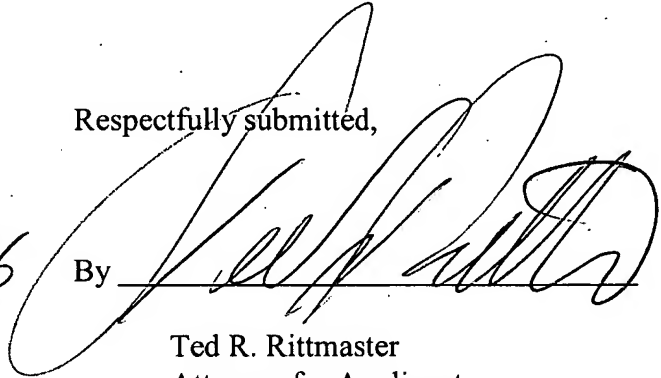
The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-0872. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper

or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-0872. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-0872.

Respectfully submitted,

Date November 20, 2006

By

A large, stylized handwritten signature in black ink, likely belonging to Ted R. Rittmaster, is written over a horizontal line.

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